

Amendment to the Drawings

A replacement sheet for **Figure 1** is attached. This sheet now includes the legend "Background" responsive to the Examiner's request. It is respectfully submitted that the material illustrated in **Figure 1** contains background material for this invention. However, applicants do not make any admission at this time that such material meets the requirements under 35 U.S.C. 102/103 to qualify as Prior Art. Therefore, applicants respectfully request the removal of this rejection and attempt to compromise by adding the label of "Background." If the Examiner can provide actual evidence to support that the material illustrated in figure 1 meets the requirements under 35 U.S.C. 102/103 to qualify as prior art, then applicants will label the figure as Prior Art at that time. No new matter has been added, nothing has been deleted.

REMARKS

Continued examination and reconsideration of this application is respectfully requested. The specification and drawings have each been amended. Claims 1, 14, 24 and 37 have been amended. Claims 1-49 are pending.

DRAWINGS

In the drawings, **Figure 1** has been labeled "Background" responsive to the Examiner's suggestion.

SPECIFICATION

In the specification, paragraphs [0001] and [0044] have been amended to recite the relevant serial numbers and dates.

The Abstract has been revised to comply with the examiner's objection to use of the abbreviation "DSL".

CLAIMS

Objections

The Office Action of June 15, 2005 objected to claims 1 and 14 for informalities related to a use of abbreviations. Claims 1 and 14 have been amended to expand abbreviations. No new matter has been added. Entry into the record and reconsideration is respectfully requested.

35 U.S.C. §102 and 35 U.S.C. §103

Claim 1. Art of Tambe

Claims 1, 7, 24 and 25 stand rejected under 35 U.S.C. §102(e) as being anticipated by Tambe (Published U.S. Patent Application No. 200201133649), herein "Tambe".

The right to swear behind Tambe at a later date is reserved.

Claim 1 has been amended to make explicit what was previously implicit. It is respectfully submitted that Tambe does not disclose or teach all the limitations of claim 1 as amended.

It is useful to make some general comments about the Tambe disclosure. Tambe discloses embodiments of multiple local loops and embodiments of particular types of loop extenders. However Tambe does not disclose impressing either a power supply voltage or a control signal **between** first and second loops **that themselves have loop extenders installed thereon**.

The examiner is particularly directed to Tambe paragraph [0050] reproduced here "*[0050] Subscriber loop cable usually comes in bundles of 25 pairs. That is each bundle can provide service to 25 telephone lines. One embodiment of the invention can use the 25 pairs to provide just 20 ADSL connections. This leaves 4 pairs to carry power for the repeaters, and 1 pair to carry control information.*". It is

clear that Tambe proposes three classes of separate local loops – for power, for DSL signals and for extender control signals.

Tambe does not disclose how power and/or control signals are carried as a voltage mutually developed between the **same** two loops that have loop extenders installed thereon.

More specifically, claim 1 recites, in part, “*...providing power by supplying a supply voltage between the first local loop and the second local loop...*” and further recites “*... receiving power via by loading the supply voltage between the first local loop and the second local loop ...*”.(emphasis added) It is respectfully submitted that neither of those limitations is found in Tambe. Moreover, these limitations are certainly not found in combination with the further limitation in claim 1 that “*... DSL signals transmitted over a first local loop and a second local loop...*” (i.e. the **same two** local loops for both power and DSL signals).

Thus, It is respectfully submitted that Tambe does not disclose or teach all the limitations of claim 1 and therefore claim 1 is allowable under 35 U.S.C. §102(e) over Tambe.

Claim 1. Art of Shenoi

Claims 1, 7, and 24-36 also stand rejected under 35 U.S.C. §102(e) as being anticipated by Shenoi et al. (U.S. Patent No. 6,507,606), herein “Shenoi”.
The right to swear behind Shenoi at a later date is reserved.

It is respectfully submitted that Shenoi has essentially the same shortcoming as Tambe as a prior art reference to anticipate the invention. In particular the examiner is respectfully referred to Shenoi Column 8 lines 51-56, reproduced here

“...Subscriber loop cable usually comes in bundles of 25 pairs. That is each bundle can provide service to 25 telephone lines. One embodiment of the invention can use the 25 pairs to provide just 20 ADSL connections. This leaves 4 pairs to carry power for the repeaters, and 1 pair to carry control information. ...”. In contrast, claim 1 states “*...providing power by supplying a supply voltage **between** the first local loop and the second local loop...*” and further recites “*... receiving power via by loading the supply voltage **between** the first local loop and the second local loop* ...”(emphasis added). Thus, It is respectfully submitted that Shenoi also does not anticipate claim 1 and therefore claim 1 is allowable under 35 U.S.C. §102(e) over Shenoi also.

Claim 1. Art of Hurst.

The examiner has cited US Patent No. 5,422,929 issued to Hurst et al (herein “Hurst”) in regards to the positive and negative controller/power nodes of claim 2. Since claim 1 has been amended to also recite “nodes” it is well to discuss the relevant parts of the disclosures of Hurst here...

The disclosure of Hurst is directed to 4-wire Central-Office to Central-Office (CO-CO) connections (each two simplex pairs of conductors). Hurst discloses that each single 4-wire trunk circuit (two simplex pairs equivalent to **one** full-duplex connection) is implemented quite disparately from first and second 2-wire local loops

(4 wires give not one but **two** full-duplex circuits). In Hurst the 4-Wire circuit constitutes only a single full duplex circuit, and not a local loop at all (See Hurst Col. 4 Lines 44-52.) In contrast, claim 1 states “*...providing power by supplying a supply voltage between the first local loop and the second local loop...*” and further recites “*... receiving power via by loading the supply voltage between the first local loop and the second local loop ...*”. Thus, it is obvious only in impermissible hindsight to apply the single trunk Central Office to Central Office circuit powering techniques of Hurst to the (DSL carrying) local loops of claim 1. Moreover, even though Hurst discloses common-mode powering of conductor pairs to a single trunk of 4-wire circuits, the reference still does not disclose or suggest common-mode control *signaling* even on 4-wire circuits (still less 2-wire full-duplex circuits carrying DSL).

It may also be noted, in particular, that Hurst proposes using inbound and outbound pairs associated with the **same** telephone service to power his repeaters. In contrast claim 1 imposes no such restriction and indeed first and second loops may be for **unrelated** subscribers who merely by happenstance have co-located loop extender power supplies. This further points away from a finding that a person of ordinary skill would find it obvious to apply the power supply techniques of Hurst to the disclosures of Tambe or Shenoi.

Moreover, in seeking to justify combining the disclosures of Tambe and Hurst the Examiner has written “*... The suggestion/motivation for doing so would have been to provide minimum operating power loss with maximum power transfer between the automatic gain repeater circuit and subscriber loop while maintaining*

adequate transhybrid loss between the two directions of transmission and matching input impedance ...". It is respectfully submitted that it is impermissible hindsight to derive the motivation to combine from the applicant's own disclosure and neither Tambe nor Hurst make any mention of automatic gain repeater circuit with subscriber loop. There simply is insufficient motivation shown for Tambe or Shenoi improve their 2-Wire local loops by using Hurst's techniques for 4-wire trunk circuits.

Thus, it is respectfully submitted that Tambe, Shenoi and Hurst do not separately or in combination disclose or render obvious all the limitations of claim 1 as amended and allowance of claim 1 is respectfully requested.

Claim 24. In contrast with Tambe and Shenoi, Claim 24 states, in part, "... *providing power to a loop extender communications/power supply via a by supplying a supply voltage between the first local loop of the plurality of local loops and via a the second local loop of the plurality of local loops for providing power to the plurality of loop extenders; ...*". Thus, for the essentially the same reasons discussed above for claim 1, it is respectfully submitted that claim 24 is allowable over both Tambe and Shenoi.

Claims 2-23. As to claims 2-23, it is respectfully submitted that claims 2-23 are dependent, directly or indirectly, upon claim 1 therefore it is respectfully submitted that claims 2-23 are allowable for at least the same reasons as claim 1.

Claims 25-35. As to claims 25-35, it is respectfully submitted that claims 25-35 are dependent, directly or indirectly, upon claim 24 therefore it is respectfully submitted that claims 25-35 are allowable for at least the same reasons as claim 24.

Claim 36. Claims 36 stands rejected under 35 U.S.C. §102(e) as being anticipated by Shenoi et al.. It is respectfully submitted that claim 36 is a “means plus function” claim and as such should be viewed in the light of 35USC112¶6 reproduced here
“...An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”.

It is respectfully submitted that the examiner has not shown that the power supplies of Shenoi anticipate the “*first means for providing power*” or “*second means for providing power*” as **construed to cover the corresponding structure(s) described in the specification**, or equivalents thereof.

Thus, it is respectfully submitted that no showing of anticipation of claim 36 by Shenoi has been made and it is respectfully requested that the rejection of claim 36 be withdrawn.

Claim 37. Claim 37 stands rejected under 35 U.S.C. §103 in view of Shenoi and further in view of Hurst (US Patent No. 5,422,929). Claim 37 states the further limitation “*... wherein the power or the control signals are supplied as a voltage between the first local loop and the second local loop. ...*” It is respectfully submitted

that neither Shenoi nor Hurst discloses this further limitation. Reconsideration and allowance is requested.

Claims 38-49. As to claims 38-49, it is respectfully submitted that claims 38-49 are dependent, directly or indirectly, upon claim 37 therefore it is respectfully submitted that claims 38-49 are allowable for at least the same reasons as claim 37

SUMMARY

It is respectfully submitted that all rejections and objections have been overcome and that all pending claims are in condition for allowance. Allowance of pending claims 1-49 is respectfully requested.

Invitation for a telephone interview

The Examiner is invited to call the undersigned at 408-720-3486 if it is thought this could help advance disposition of this case this case.

Deposit Account

Please charge any shortages and credit any overages to Deposit Account No.
02-2666.

Respectfully submitted,
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